

$$12) \begin{array}{cccccc} & 1 & 2 & 3 & 4 & 5 \\ & -14 & -8 & -2 & 4 & 10 \\ & \swarrow & \swarrow & \swarrow & \swarrow & \\ & +6 & +6 & +6 & +6 & \end{array}$$

Recursive

$$a_n = a_{n-1} + 6$$

$$a_1 = -14$$

Explicit
(arith.)

$$a_n = -20 + 6n$$

$$13) \begin{array}{cccccc} & 6 & 5.7 & 5.4 & 5.1 & 4.8 \\ & \swarrow & \swarrow & \swarrow & \swarrow & \\ & -0.3 & -0.3 & -0.3 & -0.3 & \end{array}$$

$$a_n = a_{n-1} - 0.3$$

$$a_1 = 6$$

$$a_n = 6.3 - 0.3n$$

$$14) \begin{array}{cccccc} & 1 & -2 & 4 & -8 & 16 \dots \\ & \swarrow & \swarrow & \swarrow & \swarrow & \\ & \times -2 & \times -2 & \times -2 & \times -2 & \end{array}$$

$$a_n = a_{n-1} \cdot (-2)$$

$$a_1 = 1$$

$$a_n = -2^{n-1}$$

$$15) \begin{array}{cccc} & 1 & 4 & 16 & 64 \\ & \swarrow & \swarrow & \swarrow & \\ & \times 4 & \times 4 & \times 4 & \end{array}$$

$$a_n = 4 a_{n-1}$$

$$a_1 = 1$$

$$a_n = 4^{n-1}$$

$$16) 1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}$$

$$a_n = \frac{1}{2} a_{n-1}$$

$$a_1 = 1$$

$$a_n = \left(\frac{1}{2}\right)^{n-1}$$

Rewrite!

$$17) \frac{2}{3}, \frac{3}{3}, \frac{4}{3}, \frac{5}{3}, \frac{6}{3}$$

$$a_n = a_{n-1} + \frac{1}{3}$$

$$a_1 = \frac{2}{3}$$

$$a_n = \frac{1}{3}(n+1)$$

$$18) 36, 39, 42, 45, 48 \dots$$

$$a_n = a_{n-1} + 3$$

$$a_1 = 36$$

$$a_n = 33 + 3n$$

$$19) 36, 30, 24, 18, 12$$

$$a_n = a_{n-1} - 6$$

$$a_1 = 36$$

$$a_n = 42 - 6n$$

$$20) 9.6, 4.8, 2.4, 1.2, 0.6$$

$$a_n = \frac{1}{2} a_{n-1}$$

$$a_1 = 9.6$$

$$a_n = 9.6 \left(\frac{1}{2}\right)^{n-1}$$

Explicit

recursive

21) 7, 14, 21, 28, 35...

$$a_n = 7n$$

$$a_n = a_{n-1} + 7$$

$$a_1 = 7$$

22) 2, 8, 14, 20, 26...

$$a_n = -4 + 6n$$

$$a_n = a_{n-1} + 6$$

$$a_1 = 2$$

23) 5, 6, 7, 8, 9...

$$a_n = n + 4$$

$$a_n = a_{n-1} + 1$$

$$a_1 = 5$$

24) -1, 0, 1, 2, 3...

$$a_n = -2 + n$$

$$a_n = a_{n-1} + 1$$

$$a_1 = -1$$

25) 3, 5, 7, 9, 11

$$a_n = 2n + 1$$

$$a_n = a_{n-1} + 2$$

$$a_1 = 3$$

26) 0.8, 1.6, 2.4, 3.2, 4

$$a_n = 0.8n$$

$$a_n = a_{n-1} + 0.8$$

$$a_1 = 0.8$$

27) $\frac{1}{4}, \frac{1}{2}, \frac{3}{4}, 1, \frac{5}{4}$

rewrite $\frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{5}{4}$

$$a_n = \frac{1}{4n}$$

$$a_n = a_{n-1} + \frac{1}{4}$$

$$a_1 = \frac{1}{4}$$

28) $\frac{1}{2}, \frac{1}{4}, \frac{1}{6}, \frac{1}{8}, \frac{1}{10}$

$\frac{1}{2(1)}, \frac{1}{2(2)}, \frac{1}{2(3)}, \frac{1}{2(4)}, \frac{1}{2(5)}$

$$a_n = \frac{1}{2n}$$

$$a_n = \frac{1}{a_{n-1}^2} + 2$$

$$a_1 = \frac{1}{2}$$

29) $\frac{2}{3}, 1\frac{2}{3}, 2\frac{2}{3}, 3\frac{2}{3}, 4\frac{2}{3}$

rewrite

$\frac{2}{3}, \frac{5}{3}, \frac{8}{3}, \frac{11}{3}, \frac{14}{3}, \dots$

$$a_n = -\frac{1}{3} + n$$

$$a_n = a_{n-1} + 1$$

$$a_1 = \frac{2}{3}$$